

Linked List Introduction

2 min

Linked [lists](#) are one of the basic data structures used in computer science. They have many direct applications and serve as the foundation for more complex data structures.

The list is comprised of a series of nodes as shown in the diagram. The head node is the node at the beginning of the list. Each node contains data and a link (or pointer) to the next node in the list. The list is terminated when a node's link is null. This is called the tail node.

Consider a one-way air travel itinerary. The trip could involve traveling through several airports (nodes) connected by air travel segments (links). In this example, the initial departure city is the head node and the final arrival city is the tail node.

Since the nodes use links to denote the next node in the sequence, the nodes are not required to be sequentially located in memory. These links also allow for quick insertion and removal of nodes as you will see in future exercises.

Common operations on a linked list may include:

- adding nodes
- removing nodes
- finding a node
- traversing (or traveling through) the linked list

Linked lists typically contain unidirectional links (next node), but some implementations make use of bidirectional links (next and previous nodes).

Can you think of a real-world example using bidirectional links?

Linked List

Can you think of a real world example using bidirectional links?

